Space Weather Forecast

Issued on Thursday, 04 April 2024 at 13:06 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Solar activity expected to be Low or Very Low. Chance of G1 Minor Storm intervals on 04 Apr, declining on 05 Apr, due to coronal hole fast winds.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Solar activity has been Very Low, with no significant flares observed. There are only four simple sunspot regions on the visible disc. No Earth-directed CMEs were observed on available imagery.

Solar Wind / Geomagnetic Activity: Solar wind speeds initially weakened towards background levels during 03 Apr, but the strengthened again early on 04 Apr due to the connection with a fast solar wind. The total strength of the Earths magnetic field was initially weak but became stronger due to the connection to the fast solar wind. The important north-south component was generally near neutral, but become moderately negative from early on 04 Apr. Geomagnetic activity was Quiet to Unsettled.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Low to Very Low activity is expected, with a slight chance of isolated Moderate-class flares given the risk from over the east limb, with this increasing slightly through the period.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are forecast. Solar wind speeds are slightly elevated under the influence of a fast solar wind. These fast winds are expected to continue into 05 Apr before gradually subsiding. Geomagnetic activity is expected to be mainly Quiet to Unsettled through 04 and 05 Apr, with a chance of Active or G1/Minor Storm intervals. Activity is then forecast to gradually decrease towards Quiet levels.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to remain near background levels.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	40	20	5	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	5	10	10	15
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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